



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,636	12/01/2004	Rune Gammelsaeter	3585-109 US	4565

26817 7590 03/20/2007  
MATHEWS, SHEPHERD, MCKAY, & BRUNEAU, P.A.  
29 THANET ROAD, SUITE 201  
PRINCETON, NJ 08540

EXAMINER
----------

HOPKINS, ROBERT A

ART UNIT	PAPER NUMBER
----------	--------------

1724

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/516,636

Applicant(s)

GAMMELSAETER, RUNE

Examiner

Robert A. Hopkins

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12-1-04</u> .   | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites "wherein no gap exists between the rotational part." Examiner believes limitations should be included after "rotational part", because a gap(or no gap) has to exist between the rotational part and another structure, presumably the transitional part. Correction is requested. Claims 6-8 depend on claim 5 and hence are also rejected.

Claim 8 recites "wherein the cross-sectional area of the rotational element in the flow direction is insignificant as compared with the flow area of the axial cyclone". The term "insignificant is a relative term which renders the claim indefinite. The term "insignificant" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1724

Claims 5-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by British reference(1127514).

British reference teaches a device for an axial cyclone of the kind which is used for separating a fluid from a gas, where the gas during the flow through the axial cyclone, primarily in the axial direction of the axial cyclone assigns a rotation around the center axis of the axial cyclone and where the axial cyclone in the direction of flow comprises an inlet pipe, a transitional part(2) with a rotational element(3), and a downstream pipe(1), the cross sectional area of the downstream pipe is smaller than the cross sectional area of the inlet pipe, wherein no gap exists between the rotational part.. British reference further teaches wherein the rotational element is located in the transitional part. British reference further teaches wherein the rotational element comprises axial vanes, the axial vanes project from a substantially common joint primarily radial outward in the direction of the internal surface of the axial cyclone. British reference further teaches wherein the cross sectional area of the rotational element in the flow direction is insignificant as compared with the flow area of the axial cyclone.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowen(2115326) taken together with British reference(1127514) .

Bowen teaches a device for an axial cyclone of the kind which is used for separating a fluid from a gas, where the gas during the flow through the axial cyclone, primarily in the axial direction of the axial cyclone assigns a rotation around the center axis of the axial cyclone and where the axial cyclone in the direction of flow comprises an inlet pipe(10) having a rotational element(11), a transitional part(12), and a downstream pipe(13), the cross sectional area of the downstream pipe is smaller than the cross sectional area of the inlet pipe, wherein no gap exists between the rotational part. Bowen is silent as to a transitional part with a rotational element. British reference teaches a device for an axial cyclone of the kind which is used for separating a fluid from a gas, where the gas during the flow through the axial cyclone, primarily in the axial direction of the axial cyclone assigns a rotation around the center axis of the axial cyclone and where the axial cyclone in the direction of flow comprises an inlet pipe, a transitional part(2) with a rotational element(3), and a downstream pipe(1), the cross sectional area of the downstream pipe is smaller than the cross sectional area of the inlet pipe, wherein no gap exists between the rotational part.. It would have been obvious to someone of ordinary skill in the art at the time of the invention to place the rotational element of Bowen within the transitional part so that the maximum permitted tangential velocity is attained even with a very small part flow of gas(page 1 lines 68-74 of British reference).

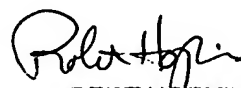
Bowen taken together with British reference further teaches wherein the rotational element is located in the transitional part. Bowen further teaches wherein the rotational element comprises axial vanes, the axial vanes project from a substantially common joint primarily radial outward in the direction of the internal surface of the axial cyclone. Bowen further teaches wherein the cross sectional area of the rotational element in the flow direction is insignificant as compared with the flow area of the axial cyclone.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rah  
March 12, 2007

  
ROBERT HOPKINS  
PRIMARY EXAMINER  
*A.U. 1724*